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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/764,011	01/17/2001	Kevin W. Burrows	206584	3590
23460	7590	05/26/2005	EXAMINER	
LEYDIG VOIT & MAYER, LTD TWO PRUDENTIAL PLAZA, SUITE 4900 180 NORTH STETSON AVENUE CHICAGO, IL 60601-6780			FILIPCZYK, MARCIN R	
			ART UNIT	PAPER NUMBER
			2161	

DATE MAILED: 05/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/764,011

Applicant(s)

BURROWS ET AL.

Examiner

Marc R. Filipczyk

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 March 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7-19 and 21-66 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-19 and 21-66 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 January 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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Response to Amendment

This action is responsive to Applicant's response filed on March 14, 2005 wherein amended claims 1-5, 7-19 and 21-66 remain pending.

To expedite the process of examination Examiner requests that all future correspondences in regard to overcoming prior art rejections or other issues (e.g. amendments, 35 U.S.C. 112, objections and the like) set forth by the Examiner that Applicants provide and link to the most specific page and line numbers of the disclosure where the best support is found (see 35 U.S.C. 132).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-5, 7-19 and 21-66 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, the segment "inserting" is indefinite. It is not clear how a binary tree is inserted from the median.

Regarding claims 2-5, 7-19 and 21-66 depend from claim 1 or contain similar subject matter as claim 1 and are rejected on the same basis.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5, 7-19 and 21-66 are rejected under 35 U.S.C. 103(a) as best as Examiner is able to ascertain as being unpatentable over "INTRODUCTION TO ALGORITHMS" by Cormen, Leiserson and Rivest (hereinafter "CLR") in view of "Indexing Large Metric Spaces for Similarity Search Queries" by Bozkaya and Tolga (hereinafter "BT").

Regarding claims 1-5, 7-19 and 21-66, CLR discloses creating and searching (page 388, CLR) a balanced binary tree using nodes and assigning values (page 386, fig. 19.4, CLR), but does not expressly teach a method for creating a binary tree from a list of elements, wherein the list includes left and right side groupings.

(Note: creating a binary balanced tree involves inserting left and right descendent nodes)

However, BT teaches indexing large metric spaces for similarity search queries (title, BT) in which a binary vp-tree is constructed (binary trees) by subdividing a list into two lists of equal cardinality at the median (pages 6 and 7, section 3.3). BT also teaches breaking up the two lists and forming an additional median (page 10, 3.8 and 3.9, BT).

(Note: binary vp-tree is introduced as a binary tree, see page 5, BT)

Further, selecting a side for processing, where for example left side groupings are in preference to right side groupings was a common programming technique before the Applicant's claimed invention. Hence, it would have been obvious to a person of ordinary skill in the art at

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the time the invention was made to create binary tree structures by reading and subdividing the list by use of a median as taught by BT to effectively construct a tree structure including all the elements in the list.

(Note: elements in a list may represent data of any type i.e. logged events)

Response to Amendment

Applicant's arguments filed on March 14, 2005 have been fully considered but they are not persuasive. The arguments and responses are listed below.

Applicant argues on pages 25-27 of the 3/14/05 response that the present claims do not contain any non-statutory matter, are enabling in view of the specification and are not indefinite.

Examiner disagrees. Applicant has over come non-statutory and enablement rejections raised in the prior office actions by amending all the independent claims, however, indefinite issues are still outstanding. The rejected segment, "not clear how a binary tree is inserted from the median" is not definite since the claims (i.e., claim 1) do not construct/insert a complete tree, instead only left and right side descendent nodes are inserted into a binary tree, thus the claimed binary tree data structure is not complete.

Applicant argues on pages 27 and 28 of the 3/14/05 response that Bozkaya leaves unspecified which node should be used as a starting node, by definition does not teach the step of specifically selecting a particular node.

Examiner disagrees. Cormen in view of Bozkaya teach every element in the claims as best as the Examiner is able to ascertain that which is claimed. Bozkaya may select the same

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median element to be the root node as that claimed (see rejection). Note, Bozkaya's system uses a method of reading a list of elements of a set to account for the total number of elements in that set, call it "cardinality" (pages 7 and 10), and selects an "arbitrary element" as a starting element of the set S, then using the cardinality Bozkaya notes the most distant element from the arbitrary element and based on these two elements, the size of the set is obtained and a median is selected (pages 7 and 10). Thus, Bozkaya's system is not limited to a given order of elements in a set (list), but instead may choose any element as a starting point to generate a B-tree. Applicant has amended the list to now read as an ordered list which in fact is a preprocessing step equivalent to that of Bozkaya. Second, having a list of three elements {1, 3, 7}, the construction of a binary tree having selected "3" as the median is identical to that claimed by the Applicant. Last, since the claims read "comprising" and not "consisting of", the claimed language is open ended and subject to additional steps as performed by Cormen in view of Bozkaya.

With respect to all the pending claims 1-5, 7-19 and 21-66, Examiner respectfully traverses Applicant's assertion based on the discussion and rejections cited above.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc R. Filipczyk whose telephone number is (571) 272-4019. The examiner can normally be reached on Mon-Fri, 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic can be reached on (571) 272-4023. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MF
May 23, 2005

Frantz Coby
FRANTZ COBY
PRIMARY EXAMINER
AU2161